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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,924	11/01/2001	Ulrich Baur	DE920000072	3496

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IBM MICROELECTRONICS
INTELLECTUAL PROPERTY LAW
1000 RIVER STREET
972 E
ESSEX JUNCTION, VT 05452

EXAMINER
KOBERT, RUSSELL MARC

ART UNIT	PAPER NUMBER
2829	

DATE MAILED: 08/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/682,924	BAUR ET AL.	
	Examiner	Art Unit	
	Russell M Kobert	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 November 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. In claim 10, lines 10 and 12 and claim 11, line10 and 12, the word "Ileakmax" appears to be misspelled.

2. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear what conditions determine leakage current to be "tolerable" or "not tolerable" as mentioned in claims 1, 7, 16 and 17. Each of claims 1, 7, 16 and 17 do not provide limitations for comparing to a screening condition that would be required to make such a determination. Moreover, it is not clear how the leakage current can be qualified as "tolerable or not" based on the resulting voltage at only the first node, as mentioned in claims 1, 7, 16 and 17, in contrast to a characteristic of the leakage current being dependent on an evaluable voltage difference between a first node and a second node as also mentioned in claims 1, 7, 16 and 17. These claimed limitations appear to conflict with each other and thereby render the claims indefinite. In claim 6, it is not understood what a "signal input/output book of a semiconductor chip" is. In claims 12-15, it is not clear if the invention is limited to a hardware circuit by itself or a hardware circuit and semiconductor chip or hardware circuit and circuit board. As best understood by the Examiner to what Applicants regard as the claimed invention, Applicants appear to be claiming a method, apparatus and computer program product for detecting defects in a semiconductor device using a technique characteristic of quiescent current testing wherein two voltages are required to determine a current

characteristic to be compared to a screening condition to determine a defect within the semiconductor device.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 7 and 12-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Kalb, Jr (5742177).

Kalb, Jr. anticipates a method (see Figure 4) for detecting defects in a semiconductor device using a technique characteristic of quiescent current testing wherein two voltages (V_1 and V_2) are required to determine a current characteristic (Defect Current Associate with $IDDQ_1$ and $IDDQ_2$) to be compared to a screening condition (see step 440) to determine a defect within the semiconductor device as best understood to be the invention described in claim 1. Moreover, the apparatus for performing the method, as described in claim 7, is considered to be inherent to the invention disclosed by Kalb, Jr. Moreover, Kalb, Jr., anticipates claims 12-15 as the limitations described therein do not further limit the apparatus described in claim 7.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalb, Jr and further in view of Smith et al (3621387).

Kalb, Jr. shows a method (see Figure 4) for detecting defects in a semiconductor device using a technique characteristic of quiescent current testing wherein two voltages (V_1 and V_2) are required to determine a current characteristic (Defect Current Associate with $IDDQ_1$ and $IDDQ_2$) to be compared to a screening condition (see step 440) to determine a defect within the semiconductor device as best understood in claims 16 and 17.

Smith et al shows a computer program product (described in col 8, ln 45-75) for execution in a data processing system comprising computer program code portions for

performing respective steps of the method for detecting defects in a semiconductor device based on leakage current as best understood in claims 16 and 17.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have combined the computer program product of Smith et al with the method taught by Kalb, Jr. to make the claimed invention because each teach methods of determining leakage current failures in a device under test. One having ordinary skill in the art would have been motivated to use the computer program product of Smith et al to perform the method steps of Kalb, Jr. to further improve the level of throughput using computer controlled operations along with the added benefit of minimizing error during testing of semiconductor devices for leakage current failures.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ooshima et al (5321354) shows a method for inspecting a semiconductor device by comparing a measured static current with a predetermined value to determine whether the semiconductor device is defective.

9. A shortened statutory period for response to this action is set to expire three month(s) from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kobert whose telephone number is (703) 308-5222.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Russell M. Kobert
Patent Examiner
Group Art Unit 2829
July 23, 2003

KAMAND CUNEO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800